

[illegible]

Commissioner for Patents  
Washington, D.C. 20231

Sir or Madam:

Please enter the following amendments.

**IN THE SPECIFICATION:**

Please delete the paragraph starting on page 1, line 29, and substitute therefor:

Although sliding doors are used in a wide variety of applications, they are often used to provide access to cold-storage lockers, which are rooms that provide large-scale refrigerated storage for the food industry. Doorways into such a room are often rather wide to allow forklift trucks to quickly move large quantities of products in and out of the room. The sliding doors are usually power actuated for minimizing the time in which the door is open for the forklift, thus minimizing the amount of cool air that can escape when the door is open.

To further minimize the cooling load of the room, the door panels should be thermally insulated and completely sealed around their entire perimeter.

Please delete the paragraph starting on page 3, line 16, and substitute therefor:

Figure 1 is a front view of a multi-panel, bi-parting sliding door in an open position.

Please delete the paragraph starting page 8, line 11, and substitute therefor:

The operation of door 12 and its seals is more clearly understood by first referring to the door's open position shown in Figures 1 and 4. From this position, a drive unit 80 moves lead panels 14 and 18 toward the center of doorway 10 to close door 12. Drive unit 80 can be any of a wide variety of known mechanisms for operating a sliding door. However, in one embodiment, drive unit 80 includes a timing belt 82 disposed about two cogged sheaves 84 and 86. Sheave 86 is driven by a motor 88 through a gear reduction 90 and a clutch 92, while sheave 84 serves as an idler. One clamp 94 couples trolley 22a of panel 14 to move with an upper portion of belt 82, and another clamp 96 couples trolley 22f of panel 18 to move with a lower portion of belt 82. Thus, depending on the rotational direction that motor 88 turns sheave 86, panels 14 and 18 move together to close the door or apart to open it. Sheave 86 turning counter clockwise (as viewed looking into Figure 3) moves belt 82 to pull lead panels 14 and 18 toward each other. According to an aspect of the invention, lag panels 16 and 20 are moved to the closed position by virtue of being coupled to the movement of the associated lead panels 14 and 18 respectively. Alternative structure for achieving this is shown in Figure 5. In closing the left half of door 12, lead panel 18 pulls lag panel 20 by way of seal 36 on panel 18 engaging seal 46 on panel 20. This requires seals 36 and 46 to be formed of material with sufficient rigidity to transfer some of the momentum of lead panel 18 to lag panel 20, and thus be used to transmit the pulling load necessary to close the door. However, the

material of the seals is also preferably soft enough to provide effective sealing. For the right half of door 12, lag panel 16 also starts moving to a closed position, as shown in Figure 5, upon taking up the slack in a link 98 that couples lag panel 16 to lead panel 14. Link 98 can be any one of a variety of connections that couple the motion of one panel to another. Examples of link 98 include, but are not limited to, a rigid sliding link or an elongated pliable member such as a strap, chain or cable. Alternatively, a more complex linkage and auxiliary drive for the lag panel can be employed, as disclosed in U.S. Patent S/N 09/394,799, filed concurrently and herewith incorporated by reference. Although only one link 98 is shown in the drawing figures, another link 98 may be added to connect panel 18 to panel 20 on the left side of door 12, which would allow lead panel 18 to pull lag panel 20 back to the unblocking position. With link 98 being pulled tight and trailing edge seal 36 engaging rear sealing surface 46 on both the right and left side of door 12, all four panels 14, 16, 18 and 20 are able to move in front of doorway 10 to close door 12.

Please delete the paragraph starting on page 9, line 14, and substitute therefor:

As door 12 moves to its closed position, upper edge seals 30 and 50 travel across upper sealing surfaces 38 and 56 respectively, but remain relatively disengaged as shown in Figure 11 (With track 24 being inclined, an unusual vertical shift appears down the center of track 24 of Figure 11 due to the cross-sectional view being taken across two different elevations of the track.). Upon reaching the closed position of Figure 9, leading edge seal 34 of panel 14 abuts forward sealing surface 44 of panel 18. And the movement of panels 14, 16, 18 and 20 down inclined track surfaces lowers the lower edge seals 32 and 52 onto the floor below doorway 10 and lowers the upper edge seals 30 and 50 into sealing engagement with the upper sealing surfaces 38 and 56, as shown in Figures 9 and 12. The same occurs on the left side of the door. In this embodiment, leading edge seal 34, forward sealing surface

44, and lower edge seals 32 and 52 are resilient, compressible polyurethane foam tubes, however a variety of other known seals are well within the scope of the invention. Since rear sealing surface 46 is spaced apart from the second upper edge seal 50, a span or gap 100 between the two is sealed by a span seal 102 (Figure 5). Span seal 102 can be attached to either end of lintel 48 to engage the leading edges of panels 16 and 20 as shown, or attached to the leading edges of panels 16 and 20 to engage the ends of lintel 48. As with the other seals, span seal 102 is a compressible, resilient neoprene foam.

Please delete the paragraph starting on page 10, line 2, and substitute therefor:

To open door 12, the operation of the door panels and the seals is basically the opposite of closing. Drive unit 80 pulls lead panels 14 and 18 away from the center of doorway 10, which first slackens link 98 as shown in Figure 10. But as panels 14 and 18 continue to open, link 98 eventually retightens to pull lag panels 16 and 20 back out to the open position as shown in Figure 4. In the case where lag panel 20 was closed by engagement of its leading edge seal 46, an alternative means for moving the rear panel may be employed, such as the auxiliary drives from the earlier-mentioned and incorporated application S/N 09/394,799. The outward horizontal movement of panels 14 and 16 separates seals 34, 36 and 54 from sealing surfaces 44, 46 and 58 respectively. And the vertical movement of panels 14 and 16 as they travel along track 24 lifts seals 30, 32, 50 and 52 away from sealing surfaces 42, 38, 56 and 42 respectively.

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October 15, 2001

Marked-Up Version of the Amendments to the Specification

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and thus be used to transmit the pulling load necessary to close the door. However, the material of the seals is also preferably soft enough to provide effective sealing. For the right half of door 12, lag panel 16 also starts moving to a closed position, as shown in Figure 5, upon taking up the slack in a link 98 that couples lag panel 16 to lead panel 14. Link 98 can be any one of a variety of connections that couple the motion of one panel to another. Examples of link 98 include, but are not limited to, a rigid sliding link or an elongated pliable member such as a strap, chain or cable. Alternatively, a more complex linkage and auxiliary drive for the lag panel can be employed, as disclosed in U.S. Patent [S/N \_\_\_\_\_] S/N 09/394,799, filed concurrently and herewith incorporated by reference. Although only one link 98 is shown in the drawing figures, another link 98 may be added to connect panel 18 to panel 20 on the left side of door 12, which would allow lead panel 18 to pull lag panel 20 back to the unblocking position. With link 98 being pulled tight and trailing edge seal 36 engaging rear sealing surface 46 on both the right and left side of door 12, all four panels 14, 16, 18 and 20 are able to move in front of doorway 10 to close door 12.

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